

**Notice of Allowability**

Application No.

10/630,430

Examiner

Michael A. Lyons

Applicant(s)

NORTH-MORRIS ET AL.

Art Unit

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 06 March 2006.
2. ☒ The allowed claim(s) is/are 2-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
 Gregory J. Tooley, Jr.  
 Supervisory Patent Examiner

**DETAILED ACTION**

***Allowable Subject Matter***

**Claims 2-20 are allowed in view of the prior art.**

The following is an examiner's statement of reasons for allowance:

As to claim 2, the prior art of record, taken either alone or in combination, fails to disclose or render obvious an optical system comprising a tunable laser providing a swept optical output, a tracking stage optically coupled to the laser having an optical filter providing a periodic optical signal in response to the swept optical output to a detector providing a periodic electric signal, the optical filter having a free spectral range of not less than a greatest expected mode hop of the tunable laser, the tracking stage providing a second periodic optical signal in quadrature with the periodic optical signal, a second detector providing a second periodic electrical signal in response to the second periodic optical signal, along with a phase detector, a frequency multiplier, and a digital signal processing that provides enhanced resolution of the swept optical output, in combination with the rest of the limitations of the above claim.

As to claim 4, the prior art of record, taken either alone or in combination, fails to disclose or render obvious an optical system comprising a tunable laser providing a swept optical output, a tracking stage optically coupled to the laser having an optical filter providing a periodic optical signal in response to the swept optical output to a detector providing a periodic electric signal, the optical filter having a free spectral range of not less than a greatest expected mode hop of the tunable laser, and a second tracking stage optically coupled to the tunable laser with a second optical filter providing a second periodic optical signal, the second optical filter having a

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second free spectral range less than the first free spectral range, in combination with the rest of the limitations of the above claim.

As to claim 6, the prior art of record, taken either alone or in combination, fails to disclose or render obvious an optical system comprising a tunable laser having a discontinuity over its tuning range between a first wavelength and a second wavelength, a first tracking stage with a first optical filter providing a first periodic optical signal to a first detector, and a second tracking stage with a second optical filter providing a second periodic signal to a second detector, the first filter having a free spectral range not less the difference between the first wavelength and the second wavelength of the discontinuity of the laser, the second filter having a free spectral range selected to provide a desired wavelength resolution of the optical system, in combination with the rest of the limitations of the above claim.

As to claim 20, the prior art of record, taken either alone or in combination, fails to disclose or render obvious an optical system comprising a tunable laser, a first tracking stage with a first optical filter providing a first periodic optical signal to a first detector and a first quadrature signal to a first quadrature detector, and a second tracking stage with a second optical filter providing a second periodic signal to a second detector and a second quadrature signal to a second quadrature detector, the first filter having a free spectral range not less than the greatest expected mode hop of the tunable laser, the second filter having a free spectral range selected to provide a desired wavelength resolution of the optical system, in combination with the rest of the limitations of the above claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

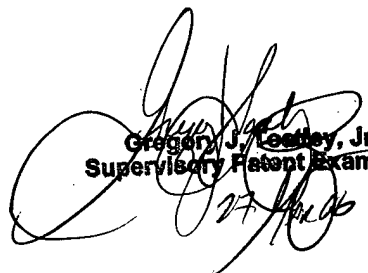
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420.

The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL  
March 22, 2006

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
27 Mar 06